Note upon Sodium Antimonyl Tartrate.

By R. H. Aders Plimmer, D.Sc. Lond.

Sodium antimonyl tartrate was described in 1842 by Dumas and Piria,* who gave it the constitution $C_8H_8O_{10}NaO,Sb_2O_3H_2O$,† but did not state how they had prepared it. Clarke and Evans‡ obtained a compound of the composition $3Na_2C_4H_4O_6 + 2Sb(OH)_3 + 3H_2O$, in 1883, by saturating tartaric acid with antimony trioxide and neutralising the solution with sodium carbonate. The first compound does not seem to have been prepared again since 1842.

Sodium antimonyl tartrate was prepared according to the methods usually given for preparing tartar emetic, by boiling a solution of acid sodium tartrate (13 grammes) with a little more than the calculated quantity (10 grammes) of antimony trioxide until the latter had almost completely passed into solution. On filtering and concentrating the solution to a small volume no crystallisation occurred, but on adding a little alcohol the whole became solid. This was then dissolved in about twice its volume of hot water, and alcohol was added until precipitation commenced, when, on cooling, the sodium antimonyl tartrate crystallised out. This compound at the ordinary temperature dries very slowly and has a moist appearance, but when dried *in vacuo* over sulphuric acid it becomes anhydrous and loses $2\frac{1}{2}$ molecules of water of crystallisation, resembling sodium tartrarsenite in this respect. The substance is very easily soluble in water and its solution reacts faintly acid to litmus.

0·7228 gramme air-dried substance lost *in vacuo* over sulphuric acid 0·0920 gramme H_2O = 12·73 per cent.

1·0538 „ „ „ „ 0·1338 gramme H_2O = 12·70 per cent.

Calculated for $C_4H_4O_7NaSb.2\frac{1}{2}H_2O$. H_2O = 12·8 per cent.

I. 0·4058 gramme substance dried *in vacuo* over sulphuric acid gave 0·2332 gramme Sb_2S_3 and 0·0974 gramme Na_2SO_4.

II. 0·3780 gramme substance dried *in vacuo* over sulphuric acid gave 0·2072 gramme Sb_2S_3 and 0·0912 gramme Na_2SO_4.

Calculated for $C_4H_4O_7NaSb$.	Sb = 39·09 per cent.;	Na = 7·49 per cent.
Found :—I.	Sb = 39·28 „	Na = 7·77 „
II.	Sb = 39·14 „	Na = 7·81 „

---

* Dumas and Piria, 'Liebig's Annalen,' 1842, vol. 44, p. 89.

† Old notation.

‡ Clarke and Evans, 'Berichte,' 1883, vol. 16, p. 2385.

When dried at 105° C., the substance loses only two molecules of water of crystallisation :—

0·6120 gramme air-dried substance lost at 105° C. 0·0640 gramme H_2O = 10·46 per cent.

Calculated for $C_4H_4O_7NaSb.2H_2O$. H_2O = 10·49 per cent.

The remaining half molecule is subsequently lost *in vacuo* over sulphuric acid.

0·6120 gramme substance dried at 105° C. then lost *in vacuo* over sulphuric acid 0·0110 gramme H_2O. Total loss = 12·25 per cent.

On exposure to air, the two and a half molecules of water of crystallisation are again taken up, but the salt does not deliquesce.

0·5370 gramme substance dried *in vacuo* over sulphuric acid, on exposure to air ncreased in weight to 0·6066 gramme.

The Influence of Increased Barometric Pressure on Man. No. 4.—The Relation of Age and Body Weight to Decompression Effects.

By Leonard Hill, F.R.S., and M. Greenwood, Jun., M.R.C.S.

(Received October 1,—Read December 5, 1907.)

Statistics of caissons and diving works tend to suggest that the percentage number of men affected injuriously by exposure to compressed air increases with age.

Pol and Watelle (1) record that men between 18 and 26 stood the work best, and that of the 25 men dismissed for illness from the works under their inspection, 19 were over 40 years old, 5 over 30, and 1 over 28 years.

Catsaras (2) investigated 62 instances of paralysis among sponge divers, and we find that, of these, 33 were over 30 years old, 17 over 25, 11 over 20, and 1 over 19. These men dived about 140 feet, spent about 10 minutes below, and were decompressed in about one minute.

Evidently this variation might depend on—(i) the actual age difference; (ii) on an increase in mean body weight with age; (iii) on a combination of (i) and (ii); (iv) it might be purely random. We cannot absolutely exclude (iv) in the instance of caisson works unless we know the total number of men at each age employed, figures which do not seem to be available.

Snell (3) gives the following table (Table I) of his observations, made at the Blackwall Tunnel works.

Unfortunately, column 2 gives not the total number employed, but only those who submitted themselves to medical inspection, which was not, at first, compulsory.